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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,917	08/21/2000	Hideyuki Watanabe	196197US2	8007
22850	7590	10/19/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER PARK, CHAN S	
			ART UNIT	PAPER NUMBER
			2622	
DATE MAILED: 10/19/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/641,917	Applicant(s) WATANABE, HIDEYUKI	
	Examiner CHAN S. PARK	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 22-27, 31, 32 and 34-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 22-27, 31, 32 and 36-38 is/are rejected.
- 7) ☐ Claim(s) 34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/14/05 has been entered.

Response to Amendment

2. Applicant's amendment was received on 7/14/05, and has been entered and made of record. Currently, **claims 1-14, 22-27, 31, 32 and 34-38** are pending.

Response to Arguments

3. Applicant's arguments with respect to claims 1-14, 22-27, 31, 32 and 34-38 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

4. Claims are objected to because of the following informalities:

Claim 1, line 5, "an image reading function" should be -- the image reading function --;

Claim 14, line 11, "and" should be deleted;

Claim 34, line 3, "a DMA transfer line" should be -- said DMA transfer line --;

Claim 34, line 5, "an image transfer part" should be -- said image transfer part --;

Claim 34, line 7, "a DMA transfer" should be -- said DMA transfer --; and

Claim 34, line 9, "a DMA transfer" should be -- said DMA transfer --.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 22-27, 31, 32 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hikawa U.S. Patent No. 6,678,065 in view of Imamura U.S. Patent No. 5,963,717.

5. With respect to claim 1, Hikawa teaches an image processing method comprising:

performing, in parallel, a process of one of an image reading function (ITT control section 6), an image recording function (IOT control section 11), an image copying function (fig. 2 & col. 4, line 42 – col. 5, line 16) and an image communicating function (fax line control section in col. 3, line 62 – col. 4, line 2), while performing at least another process of the image reading function, the image recording function, the image copying function and the image communicating function (col. 6, lines 34-36);

storing automatically a file of the image data processed by said performing independently of processes of the image reading function, the image recording function, the image copying function and the image communication function (col. 3, lines 35-53, 56-59 and 65-67); and

buffering the image data temporarily in a buffer (band buffer memory) before said storing (col. 3, lines 35-45),

wherein the image processing method uses DMA transfer method (col. 6, line 44).

Hikawa, however, does not teach expressly the method comprising:

causing a DMA transfer request when a storage capacity of said buffer occupied by the image data reaches a predetermined preset value; and

transferring the image data within said buffer by a DMA transfer based on the DMA transfer request.

Imamura, the same field of endeavor of the image processing, teaches a method comprising:

performing image processing of image data in a printer, a copying machine or a facsimile (col. 1, lines 5-9);

storing the image data in a memory (RAM 3 in fig. 2);

buffering the image data temporarily in a buffer before said storing (col. 3, lines 5-19);

causing a DMA transfer request (instruction by the CPU 1) when a storage capacity of said buffer occupied by the image data reaches a predetermined preset value (col. 3, lines 5-19); and

transferring the image data within said buffer by a DMA transfer based on the DMA transfer request (col. 3, lines 5-19).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the DMA transfer request method of Imamura into the image processing method of Hikawa.

The suggestion/motivation for doing so would have been to image process the image data at a high speed (Abstract of Imamura).

Therefore, it would have been obvious to combine Hikawa with Imamura to obtain the invention as specified in claim 1.

6. With respect to claim 2, Hikawa teaches the image processing method, wherein said performing further stores the file of the image data in a storage unit which is provided internally or externally to an image processing apparatus which has each of the functions (col. 3, lines 35-45). Also, refer to fig. 2 of Imamura.

7. With respect to claim 3, Hikawa teaches the image processing method, wherein said performing further transfers the image data processed by each of the function on one or a plurality of buses within the image processing apparatus (fig. 1). Also, refer to fig. 1 of Imamura.

8. With respect to claim 4, Hikawa teaches the image processing method, wherein said performing further carries out the processes of the two or more functions in response to an internal command and/or an external command of the image processing apparatus (col. 5, lines 38-46 & col. 2, lines 15-24).

9. With respect to claim 5, Hikawa teaches the image processing method, wherein the external command is issued from one or a plurality of external apparatus coupled to the image processing apparatus via a network (col. 4, lines 3-14). Also, refer to fig. 2 of Imamura.

10. With respect to claim 6, Hikawa teaches the image processing method as claimed in claim 1, wherein said storing further stores the file of the image data by adding specific information which enables identification of the file. Note that assigning specific information or address to the image file stored in the memory is an inherent/obvious step since the image forming apparatus must identify each files to perform the image processing based on the priority assigned and commands.

11. With respect to claim 14, Hikawa discloses an image processing apparatus (image forming apparatus 100) comprising:

an image data bus line (system bus 14) configured to transfer image data;

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an image reading part (ITT control system 6) configured to read a document image and to output read image data to said image data bus line (col. 3, lines 54-61 & col. 4, lines 42-62);

an image communicating part (network control section 9 or fax line control section 8) configured to receive image data from a communication line (LAN in col. 4, lines 3-6) to output received image data to said image data bus line, and to receive transmitting image data from said image data bus line to transmit the transmitting image data to the communication line (transmitting fax in col. 3, line 62 – col. 4, line 2);

an image recording part configured to receive recording image data from said image data bus line and to record an image on a recording medium based on the recording image data (col. 5, lines 9-16);

a control unit (job control section 2) configured to control one of said image reading part, said image communicating part and said image recording part which is unused for the processing of the image data to process the image data in parallel, while performing at least one of a reading operation by said image reading part, a recording operation by said image recording part, a transmitting operation by said image communicating part and a receiving operation by said image communicating part (col. 3, lines 1-17; col. 7, lines 23-31 & step 105 in fig. 5); and

buffer (band buffer memory) configured to temporarily buffer the read image data, the transmitting image data the received image data on said image data bus line (col. 3, lines 35-45)

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wherein the image processing apparatus uses DMA transfer method (col. 6, line 44).

Hikawa, however, does not disclose expressly the image processing apparatus comprising:

a DMA transfer bus line configured to transfer the image data within said buffer by a DMA transfer; and

an image transfer unit configured to transfer the image data within said buffer to said DMA transfer bus line based on a DMA transfer request,

wherein a DMA transfer request is supplied to said image transfer unit when a storage capacity of said buffer occupied by the image data reaches a predetermined preset value.

Imamura, the same field of endeavor of the image processing, discloses an image processing apparatus comprising:

image processor for image processing of image data in a printer, a copying machine or a facsimile (col. 1, lines 5-9);

storing unit for storing the image data (RAM 3 in fig. 2);

a buffer for buffering the image data temporarily in the buffer before said storing (col. 3, lines 5-19);

causing a DMA transfer request (instruction by the CPU 1) when a storage capacity of said buffer occupied by the image data reaches a predetermined preset value (col. 3, lines 5-19);

a DMA transfer bus line (local bus) configured to transfer the image data within said buffer by a DMA transfer (fig. 1); and

transferring the image data within said buffer by a DMA transfer based on the DMA transfer request (col. 3, lines 5-19).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the DMA transfer request method of Imamura into the image processing method of Hikawa.

The suggestion/motivation for doing so would have been to image process the image data at a high speed (Abstract of Imamura).

Therefore, it would have been obvious to combine Hikawa with Imamura to obtain the invention as specified in claim 14.

12. With respect to claim 31, Imamura discloses an image storing part configured to buffer the image data on said DMA transfer bus line (col. 2, line 60 – col. 3, line 4).

13. With respect to claim 32, as previously stated in the Office action, Hikawa discloses the image processing apparatus, wherein:

said image data bus line includes a first image data bus line and a second image data bus line which are independently usable by operations carried out in parallel (col. 3, lines 35-45 & col. 4, lines 28-39); and

said buffer includes a first buffer which temporarily stores image data on the first image data bus line (DRAM), and a second buffer which temporarily stores image data on the second image data bus line (HDD).

Although two distinct bus lines are not explicitly shown, it is inherent that two bus lines are present (one connected to DRAM and another connected to HDD) in the system for transferring and exchanging image data among resources.

14. With respect to claim 36, the combination of Hikawa and Imamura discloses the image processing apparatus, wherein said image storing part includes first and second image storing parts (DRAM and HDD of Hikawa) configured to store the image data on said DMA transfer bus line (Imamura), and the image data within said first image storing part is transferred to and stored in said second image storing part (col. 3, lines 35-45 & col. 5, lines 38-46 of Hikawa).

15. With respect to claim 37, Hikawa discloses the image processing apparatus, wherein said first image storing part is made up of a memory (DRAM or page memory in col. 3, lines 35-45).

16. With respect to claim 38, Hikawa discloses the image processing apparatus, wherein said second image storing part is made up of a hard disk drive (HDD in col. 3, lines 46-53).

17. With respect to claim 7, arguments analogous to those presented for claims 1 and 14, are applicable.

18. With respect to claim 8, arguments analogous to those presented for claims 1 and 14, are applicable.

19. With respect to claim 9, arguments analogous to those presented for claim 2, are applicable.

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20. With respect to claim 10, arguments analogous to those presented for claims 3 and 14, are applicable.

21. With respect to claim 11, arguments analogous to those presented for claims 4 and 14, are applicable.

22. With respect to claim 12, arguments analogous to those presented for claim 5, are applicable.

23. With respect to claim 13, arguments analogous to those presented for claim 6, are applicable.

24. With respect to claim 22, Hikawa discloses an image processing system comprising:

an image processing apparatus including:

an image reading part (ITT control system 6) configured to read a document and to output image data (col. 3, lines 54-61 & col. 4, lines 42-62);

an image communicating part (network control section 9 or fax line control section 8) configured to communicate image data via a communication line (LAN in col. 4, lines 3-6);

an image recording part (IOT control section 11) configured to record an image on a recording medium based on image data (col. 5, lines 9-16); and

a control unit (job control section 2) configured to control a process of one of said image reading part, said image communicating part and said image recording

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part in parallel while controlling at least another process of said image reading part, said image communicating part and said image recording part (col. 6, lines 34-36);

an electronic filing apparatus (host computer) coupled to said image processing apparatus; and

a storage unit (specific memory location in col. 4, line 10) coupled to said electronic filing apparatus,

wherein said control unit is further configured to automatically store a file of the image data processed in parallel in said storage unit, independently of processes of said image reading part, said image communicating part and image recording part (col. 4, lines 28-32 & col. 5, lines 37-46).

With respect to rest of claim, arguments analogous to those presented for claim 14, are applicable.

25. With respect to claim 23, Hikawa discloses the image processing system, wherein said image processing apparatus and said electronic filing apparatus are coupled via a network (col. 4, lines 3-14).

26. With respect to claim 24, Hikawa discloses the image processing system, wherein said image processing apparatus further includes network connecting part (network control section 9) configured to connect said image processing apparatus to said network (col. 4, lines 3-14).

27. With respect to claim 25, arguments analogous to those presented for claim 22, are applicable.

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28. With respect to claim 26, arguments analogous to those presented for claim 23, are applicable.

29. With respect to claim 27, arguments analogous to those presented for claim 24, are applicable.

Allowable Subject Matter

30. Claims 34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Contact Information


31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAN S. PARK whose telephone number is (571) 272-7409. The examiner can normally be reached on M-F 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csp
October 6, 2005

Chan S. Park
Examiner
Art Unit 2622


EDWARD COLES
SUPERVISORY PATENT EXAMINER
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